Melvin Butte Forest Management Project

Silviculture Treatment Specifications and Implementation Guidelines

Stewardship Imp Units 28 (Stand 11787)

Past harvest history

In 1980 Stand (11787) was included in the Melvin Area Salvage Sale. Dead and at-risk large ponderosa pines (generally greater than 40 inches dbh) were removed from the stand. Evidence of the salvage includes old stumps and highly displaced skid trails within the stand.

Stand Characteristics

Unit	*Acres*	*Aspect*	*Elevation*	*Slope*	*Site Index (PIPO)*	*Plant Assoc. (Volland 1982)*
28	*97*	*NW*	*5020*	*4-12%*	99	*Mixed conifer –dry CWS112*

Climate in the vicinity of the stand is characterized by hot dry summers and cool wet winters with occasional summer thunderstorms. Mean annual precipitation averages approximately 35 inches and occurs as both rain and snow mainly during the winter months (Larson 1976).

Table 1: Stand table of existing conditions for ponderosa pine and white fir, stand (11787).

(**Ponderosa pine**)

Diameter Class	TPA	BA	Cu Ft Volume	Merch BF
2	20	0.1	0.7	0.0
4	7	0.3	2.7	0.0
6	0	0.0	0.0	0.0
8	8	2.7	37.8	0.0
10	0	0.0	0.0	0.0
12	4	2.7	52.8	209.3
14	0	0.0	0.0	0.0
16	2	2.7	58.2	200.3
18	3	5.3	159.1	710.6
20	4	8.0	245.6	1176.9
22	1	2.7	88.5	462.0
24	3	8.0	297.8	1591.3
26	0.7	2.7	90.8	498.7
28	0.6	2.7	105.5	620.7
30	1.7	8.0	282.4	1631.4
32	0.5	2.7	96.3	566.2
34	1.3	8.0	319.0	1975.5
36	0.4	2.7	102.9	629.2
38	1	8	369	2374
40	0.6	5.3	212.0	1329.2
42	0.3	2.7	102.5	626.6
44	0.2	2.7	95.9	573.5
Total	58	78	2720	15176

(**White fir**)

Diameter Class	TPA	BA	Cu Ft Volume	Merch BF
2	320	3.1	18.7	0.0
4	113	8.8	102.0	0.0
6	110	18.7	283.4	0.0
8	66	21.3	409.0	0.0
10	34	18.7	442.7	1667.6

12	30	24.0	620.2	2310.3
14	24	24.0	660.3	2726.7
16	6	8.0	253.6	1107.0
18	10	16.0	502.9	2265.1
20	1	2.7	96.0	492.3
22	1	2.7	100.9	522.0
24	2	5.3	178.7	912.4
26	0.7	2.7	79.7	389.4
28	0	0.0	0.0	0.0
30	1.1	5.3	186.8	1026.9
32	0.5	2.7	87.2	457.9
Total	718	164	4022	13878

Table 2. Stand conditions (all species) combined.

BA/acre 0-4.9"dbh	BA/acre 5-9"dbh	BA/acre 9.1-21"dbh	BA/acre 21"+ dbh	Total BA/acre-all size class	TPA 0-4.9"dbh	TPA 5-9" dbh	TPA 9.1-20.9" dbh	TPA 21+" dbh	Total TPA all size classes
14	43	112	75	244	553	184	117	16	870

Geology and Soils

Soils are described in the DNF Soil Resource Inventory (SRI) (Larson 1976). Soils in stand (11787) are identified as SRI mapping unit 28 and the soil profile characteristics are listed in table 3.

Table 3: Soil profile characteristics for SRI mapping unit 28 (Larson 1976).

Horizon	Depth (inches)	pH	Color	Texture	% Coarse fragments	Structure	Permeability
Oi	0-2						
A	2-5	6.4	Dark brown	Loamy sand	5	Granular	Rapid
Bw1	5-15	6.4	Yellowish brown	Loamy sand	10	Single grain	Rapid
Bw2	15-27	6.4	Yellowish brown	Gravelly sandy loam	15	Massive	Rapid
2C1	27-50	6.5	Grayish brown	Cobbly sandy loam	50	Massive	Rapid
2C2	50-60	6-5	Grayish brown	Very cobbly sandy loam	70	Massive	Moderate to slow

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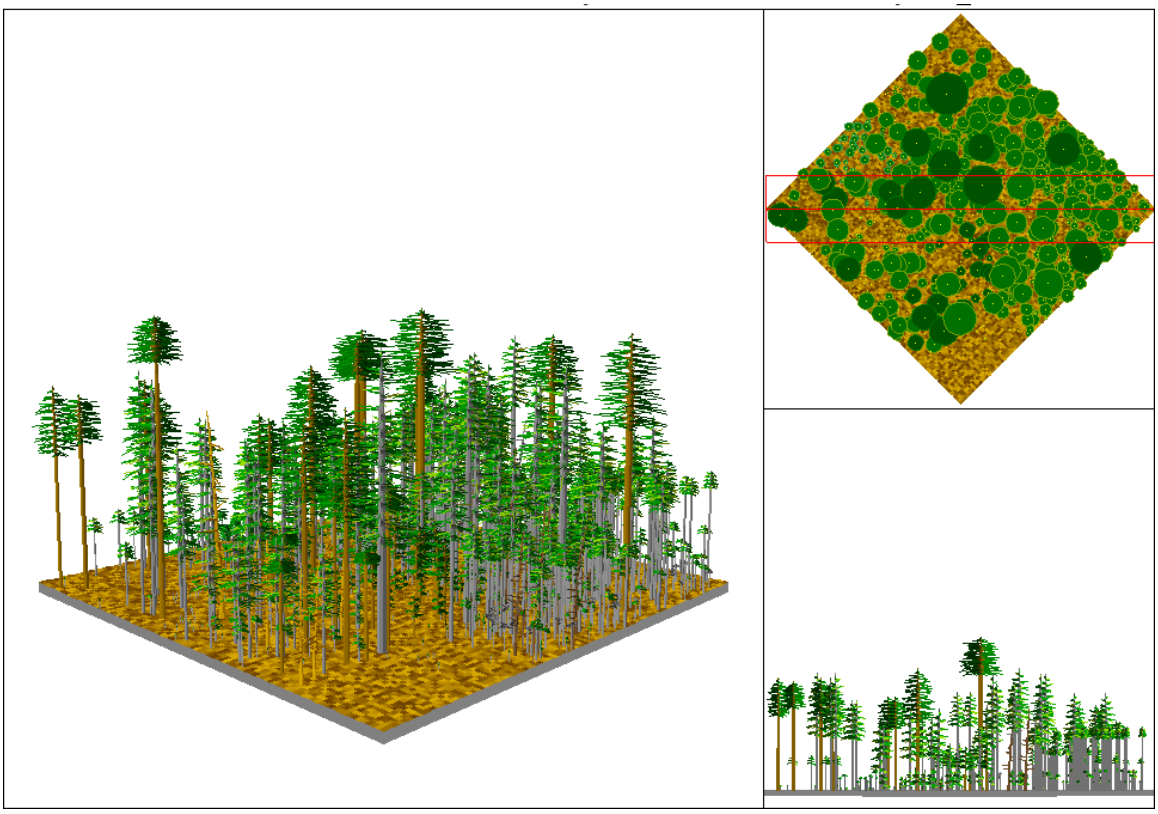

Figure 1. Existing condition visual representation of Unit 28 (SVS)

Structure:

The stand is in the old forest multi-stratum phase (OFMS) dominated by encroaching white fir but with a legacy component of overstory old growth ponderosa pine (Oliver and Larson 1996).

Fuels condition:

Stand has deep duff collars as well as deep needle mats throughout. 1000 hour fuels are high and approximate 15-30 tons an acres due to the years of western bark beetle, white fir annosus and fir engraver as well as other competition induced mortality agents. Desirable outcomes of burning include; maintenance of old growth ponderosa pine trees in order to retain old growth character.

Insects and Disease:

The stand contains evidence of fir engraver, western bark beetle as well as pockets of white fir annosus. The root rot pockets were most evident on the uphill side 1620rd and have created pockets of high down wood contributing to the 15-30tons/acre of 1000hr fuels.

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Goals of hand-thinning/ piling:

Reduce ladder fuels within and among old growth ponderosa pine

Induce large white fir snag creation by the intentional placement of hand-piles and burning

Cutting Prescription:

Cutting and hand-piling of **ALL** white fir and lodgepole from 1ft tall up to 8"DBH. Retain **ALL** ponderosa pine of any size and in any condition. Retain **ALL** snags of any size.

Table 4. TPA and BA/acre of the size class that corresponds with the prescription

BA/acre 0-8" DBH	TPA 0-8"DBH
46	**709**

Goal of hand-piling:

Hand-piling will be utilized in such a way as to induce mortality, snag creation, of overstory white fir (upon the step of hand-pile burning) while preventing mortality to ponderosa pine.

Location of Piles:

Where locations exist (i.e. overstory white fir too large to thin) place these piles underneath and/or surrounding the bases of these large white fir (>8"dbh). Ensure placement of these piles are not also located near bases of overstory ponderosa pine or connected fuel that can lead to their bases.

With remaining piles, place them in created openings (from activity of thinning) ensuring these locations do not potentially scorch bases of overstory ponderosa pine.

Goal of Prescribed Fire:

Prescribed Fire:

Shall be conducted in a staged approach and in such a way that chips away at the years of fuel loading accumulations. In this way, at least 3 burning entries may be necessary to remove the activity and natural fuels and promote the adequate seed bed required for successful ponderosa pine regeneration.

Silviculture objectives of prescribed fire:

Remove heavy duff accumulations surrounding old growth ponderosa pine (without inducing mortality) and throughout the stand in order to facilitate a receptive seed bed from overstory ponderosa pine**.**